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Ninth Circuit Holds That Intermediate Copying of Object Code Is Fair Use

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CASE NOTES

NINTH CIRCUIT HOLDS THAT INTERMEDIATE COPYING OF OBJECT CODE IS FAIR USE

Sega Enterprises v. Accolade, Inc., 24 U.S.P.Q.2D 1561 (9th Cir. 1992).

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INTRODUCTION

In a case of first impression, the Ninth Circuit concluded that reverse engineering is fair use if it is the only way to gain access to the unprotected functional elements of a program's object code and there is a reasonable purpose behind such access.

FACTS

Sega manufactures and sells video game systems, including the Genesis console and game cartridges. Accolade manufactures software game cartridges that are compatible with the Genesis console. In order to gain this compatibility Accolade "reverse engineered" Sega's programs. Accolade "disassembled" or "decompiled" Sega's object code, downloaded it to a PC and translated it to human readable source code. Other software manufacturers were also producing game cartridges compatible with Sega's Genesis Console, however they had entered into licensing agreements with Sega and were paying for the privilege. Sega sued Accolade. The district court ruled in favor of Sega, stating that Accolade could have gained access to the functional elements of compatibility by some other means,[1] and granted Sega's request for injunctive relief.[2]

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1. Sega Enterprises Ltd. v. Accolade, Inc., 785 F.Supp. 1392 (N.D. Cal. 1992).

2. The District Court enjoined Accolade from (1) disassembling Sega's copyrighted object code; (2) using or modifying Sega's copyrighted code; (3) developing, manufacturing, distributing or selling Genesis-compatible games that were created in whole or in part by means that included disassembly; and (4) manufacturing, distributing or selling any Genesis-compatible game that prompts the Sega Message. *Sega*, 24 U.S.P.Q.2D at 1565.

Accolade raised four arguments in support of its position.[3] First, Accolade argued that intermediate copying does not constitute infringement under section 106 of the Copyright Act unless the final copy is "substantially similar" to the work being copied.[4] Second, Accolade argued that decompiling or disassembling object code in order to gain access to the functional requirements for compatibility is lawful under section 102(b) of the Act, which does not extend copyright protection to such functional elements.[5] Third, Accolade argued that disassembly is authorized by section 117 of the Act, because it permits the lawful owner of the copy of a computer program to load (copy) the program into a computer's memory.[6] Lastly, Accolade argued that its copying of the object code in order to gain access to the functional elements contained in the code is a fair use which is privileged by section 107 of the Act.[7] The court was quick to point out that Accolade's first three arguments were without merit, stating that Accolade's act of copying of the object code was in fact infringement. However, as to Accolade's fourth argument, the court concluded:

> based on the policies underlying the Copyright Act that disassembly of copyrighted object code is, as a matter of law, a fair use of a copyrighted work if such disassembly provides the only means of access to those elements of the code that are not protected by copyright and the copier has a legitimate reason for seeking such access. Accordingly, we hold that Sega has failed to demonstrate a likelihood of success on the merits of its copyright claim. Because on the record before us the hardships do not tip sharply (or at all) in Sega's favor, the preliminary injunction issued in its favor must be dissolved, at least with respect to that claim.[8]

A. *Intermediate copying*[9]

In support of its ruling as to Accolade's first three arguments above, the court pointed to the ruling in *Walker v. University Books*, in which it held that the copyright act does not concern itself with what stage of the process the infringement took place.[10] Regarding

3. *Id.* at 1565.
4. *Id.*
5. *Id.*
6. *Id.* at 1565-1566.
7. *Sega*, 24 U.S.P.Q.2D at 1566.
8. *Id.* It seems apparent that the fact that Sega, along with Nintendo, dominates the video game industry played a significant role in the Court's decision.
9. *Id.*
10. *Id.* Citing Walker v. University Books, 602 F.2d 859, 864, 202 U.S.P.Q.2D 793 (9th

Accolade's citation of several cases which allowed some copying, the court pointed out that in all of those cases it was the "degree of similarity between the allegedly infringed work and the defendant's final product" that provided the basis of the court's decision.[11] In none of the cases was intermediate copying at issue.[12] The court therefore concluded that the issue of whether "intermediate copying of computer object code infringes the exclusive rights granted to the copyright owner in section 106 of the Copyright Act is a question of first impression."[13]

B. *The Idea/Expression Distinction*[14]

Accolade argued that its copying of the object code did not violate Section 102(b).[15] Accolade stated that because object code is not humanly readable "disassembly of a commercially available computer program into human-readable form should not be considered an infringement of the owner's copyright."[16] In response, the court pointed out that Accolade's argument ran contrary to settled law[17] and that further, by making such an argument, Accolade was stating essentially that object code should not be accorded the "full range of copyright protection."[18] The court, showing its familiarity with computer technology, stated:

> Nor does a refusal to recognize a *per se* right to disassemble object code lead to an absurd result. The ideas and functional concepts underlying many types of computer programs, including word processing programs, spreadsheets, and video game displays, are readily discernible without the need for disassembly,

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Cir. 1979), where the court stated: "[T]he fact that an allegedly infringing copy of a protected work may itself by only an inchoate representation of some final product to be marketed commercially does not in itself negate the possibility of infringement." *Id.* at 864.

11. *Sega*, 24 U.S.P.Q.2D at 1566. The only cases cited by Accolade which involved similar copying of object code were Computer Assoc. Int'l v. Altai, Inc., 23 U.S.P.Q.2D 1241 (2d Cir. 1992); NEC Corp. v. Intel Corp., 10 U.S.P.Q.2D 1177 (N.D. Cal. 1989); and E.F. Johnson Co. v. Uniden Corp., 623 F.Supp. 1485 (D. Minn. 1985). *Sega*, 24 U.S.P.Q.2D at 1566.

12. *Sega*, 24 U.S.P.Q.2D at 1566.

13. *Id.* at 1567.

14. *Id.*

15. *Id.*

16. *Id.*

17. *Sega*, 24 U.S.P.Q.2D at 1567.

18. *Id.* The Court went on to cite the National Commission on New Technological Uses of Copyrighted Works (CONTU) which recommended that the "1980 Amendments to the Copyright Act unambiguously extended copyright protection to computer programs, Pub. L. 96-517, sec. 10, 94 Stat. 3028 (1980) (codified at 17 U.S.C. Sections 101, 117); *see* National Commission on New Technological Uses of Copyrighted Works, Final Report 1 (1979)[CONTU Report]." *Id.*

> because the operation of such programs is visible on the computer screen. The need to disassemble object code arises, if at all, only in connection with operations systems, system interface procedures, and other programs that are not visible to the user when operating — and then only when no alternative means of gaining an understanding of those ideas and functional concepts exists. In our view, consideration of the unique nature of computer object code thus is more appropriate as part of the case-by-case, equitable "fair use" analysis authorized by section 107 of the Act.[19]

C. *Section 117*[20]

In response to Accolade's argument that the provision of Section 117 which allows for the copying of computer programs for the purpose of utilizing those computer programs[21] authorized such copying of Sega's object code, the court stated that Accolade's use of Sega's object code went far beyond that which was contemplated by section 117.[22]

D. *Fair Use*[23]

Accolade finally succeeded with its fourth argument regarding fair use. Accolade argued that its copying of the object code was a "necessary step in the examination of the unprotected ideas and functional concepts embodied in the code . . ."[24] and therefore was a "fair use that is privileged by section 107 of the Act."[25] The court agreed, stating:

> Where there is good reason for studying or examining the unprotected aspects of a copyrighted computer program, disassembly for purposes of such study or examination is a fair use.[26]

The court rejected Sega's argument that use of the fair use defense in cases involving disassembly of object code is precluded by section 117 of the Act stating:

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19. *Id.*
20. *Id.* at 1568.
21. *Id.*
22. *Sega*, 24 U.S.P.Q.2D at 1568, citing the CONTU Report at 13 which stated "[b]ecause the placement of any copyrighted work into a computer is the preparation of a copy [since the program is loaded into the computer's memory], the law should provide that persons in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability." *Id.*
23. *Id.*
24. *Id.*
25. *Id.*
26. *Id.*

> That argument verges on the frivolous. Each of the exclusive rights created by section 106 of the Copyright Act is expressly made subject to all of the limitations contained in sections 107 through 120. 17 U.S.C. Section 106. Nothing in the language or the legislative history of section 117, or in the CONTU Report, suggests that section 117 was intended to preclude the assertion of a fair use defense with respect to uses of computer programs [that] are not covered by section 117, nor has section 107 been amended to exclude computer programs from its ambit.[27]

The court went on to say that in fact section 117 covered those uses that were "lawful per se"[28] and that section 107 was enacted for the purpose of establishing "a defense to an otherwise valid claim of copyright infringement."[29] The court concluded that because "Congress has not chosen to provide a *per se* exemption to section 106 for disassembly does not mean that particular instances of disassembly may not constitute fair use."[30]

Regarding Sega's second argument that the legislative history of Section 906 of the Semiconductor Chip Protector Act of 1984 indicated that Congress did not intend disassembly to be a fair use,[31] the court pointed out Congress's intent in passing Section 906 of the SCPA was to provide particular protection to semiconductor chips because their uniquely "utilitarian" nature[32] might exempt them from protection under the Copyright Act.[33] The court observes that the SCPA does not say anything about the lawfulness of disassembly.[34]

The court cited section 107's factors to be considered in determining whether a particular use is a fair one:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
> (2) the nature of the copyrighted work;
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
> (4) the effect of the use upon the potential market for or value

27. *Sega*, 24 U.S.P.Q.2D at 1568.
28. *Id.*, citing 17 U.S.C. Section 117.
29. *Sega*, 24 U.S.P.Q.2D at 1568.
30. *Id.*
31. *Id.* The Court noted that "Section 906 of the SCPA authorizes the copying of a 'mask work' on a silicon ship in the course of reverse engineering the chip. 17 U.S.C. Section 906." *Id.*
32. *Id.* at 1569.
33. *Id.*
34. *Sega*, 24 U.S.P.Q.2D at 1569.

of the copyrighted work.[35]

With regard to the district court's treatment of these factors and its application of the factors to this case, the court pointed out:

> In determining that Accolade's disassembly of Sega's object code did not constitute a fair use, the district court treated the first and fourth statutory factors as dispositive, and ignored the second factor entirely. Given the nature and characteristics of Accolade's direct use of the copied works, the ultimate use to which Accolade put the functional information it obtained, and the nature of the market for home video entertainment systems, we conclude that neither the first nor the fourth factor weighs in Sega's favor. In fact, we conclude that both factors support Accolade's fair use defense, as does the second factor, a factor which is important to the resolution of cases such as the one before us.[36]

Regarding the first factor, the court pointed out that the presumption against fair use when a commercial purpose is involved can be rebutted by examining the characteristic of the particular use.[37] The court stated that because Accolade copied the object code only to reveal the uncopyrighted ideas and functional elements of the program, the commercial nature of the copying was only "indirect or derivative."[38] Furthermore, the court stated:

> . . .we are free to consider the public benefit resulting from a particular use notwithstanding the fact that the alleged infringer may gain commercially. . . .[i]n the case before us Accolade's identification of the functional requirements for Genesis compatibility has led to an increase in the number independently designed video game programs offered for use with the Genesis console. It is precisely that growth in creative expression, based on the dissemination of other creative works and the unprotected ideas contained in those works, that the Copyright Act was intended to promote.[39]

Regarding the second statutory factor the court noted that not all forms of expression are entitled to the same protection under the Copyright Act:

> The protection established by the Copyright Act for original works of authorship does not extend to the ideas underlying a

35. *Id.* Citing 17 U.S.C. § 107.

36. *Sega*, 24 U.S.P.Q.2D at 1569.

37. *Id.*, citing Hustler Magazine, Inc. v. Moral Majority, Inc., 796 F.2d 1148, 1152 (9th Cir. 1986).

38. *Sega*, 24 U.S.P.Q.2D at 1569.

39. *Id.* at 1570.

> work or to the functional or factual aspects of the work. 17 U.S.C. section 102(b). To the extent that a work is functional or factual it may be copied, *Baker v. Selden*, 101 U.S. 99, 102-04 (1879), as may those expressive elements of the work that "must necessarily be used as incident to" expression of the underlying ideas, functional concepts or facts, *id.* at 104. . . . Works that are merely compilations of fact are copyrightable, but the copyright in such a work is "thin." *Feist Publications*, 111 S. Ct. at 1289.[40]

The court pointed out that although computer programs may contain some creative elements, they are essentially "utilitarian articles"[41] and that because of this "hybrid nature of computer programs"[42] there has developed no established standard for separating out protected and unprotected elements.[43]

The court rejects Sega's argument that the record does not establish that disassembly was the only means by which Accolade could gain access to the functional aspects of Sega's program and notes that the district court committed "clear error" in that the record clearly establishes that humans cannot read object code and that although it is possible to disassemble object code by hand instead of through the use of a "decompiler" it is clearly necessary to make a written or electronic copy of the object code in order to translate it into human readable form.[44] Furthermore, with respect to the district court's finding that Accolade could have utilized a process known as "peeling" to avoid copyright infringement as authorized by 17 U.S.C. section 906, the court stated this too was error because peeling reveals only a "physical diagram" of the object code and does not eliminate the necessity of translating the object code into source code.[45]

The court concluded as to the second factor that "because Sega's video game programs contain unprotected aspects that cannot be examined without copying, we afford them a lower degree of protection than more traditional literary works."[46]

As to the third factor, the court noted that because Accolade copied Sega's programs in their entirety, this factor weighed against

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40. *Id.* at 1571.

41. *Id.*

42. *Id.*

43. *Sega*, 24 U.S.P.Q.2D at 1571. The Court cites the Second Circuit's observation that the attempts to deal with this issue could be characterized as attempting " 'to fit the proverbial square peg in a round hole.' *CAI*, 23 U.S.P.Q.2d at 1257."

44. *Id.* at 1572.

45. *Id.* The Court also rejected the District Court's contention that Accolade could have avoided copyright infringement by programming a "clean room." *Id.*

46. *Id.* at 1573.

Accolade. However, the court also stated that the copying of the entire program "does not, however, preclude a finding of fair use *per se*."[47] The court concluded in fact that "where use is limited as it was here, the [third] factor is of very little weight. *Cf. Wright v. Warner Books Inc.*, 953 F.2d 731, 738 [20 U.S.P.Q.2d 1992] (2d Cir. 1991)."[48]

As for the fourth statutory factor, the court pointed out that while Accolade's use of Sega's program, if it became widespread, may have an adverse effect on Sega, Accolade did not seek to usurp Sega's games but created its own games which were now compatible and could be used on Sega's Genesis console.[49] Further, the court pointed out that devotees of video games could reasonably be expected to purchase both Sega's games as well as Accolade's.[50] As to the fourth factor, the court therefore concluded:

> In any event, an attempt to monopol[i]ze the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression and cannot constitute a strong equitable basis for resisting the invocation of the fair use doctrine. Thus we conclude that the fourth statutory factor weighs in Accolade's, not Sega's, favor notwithstanding the minor economic loss Sega may suffer.[51]

As to the interpretation of the four statutory factors, the court concluded by stating that the first, second and fourth statutory factors weighed in favor of Accolade,[52] and that only the third factor weighed slightly in favor of Sega.[53] Accordingly, as to the question of whether the Accolade's use was fair the court concluded:

> . . .where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyrighted computer program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work, as a matter of law. Our conclusion does not, of course, insulate Ac-

47. *Id.*, citing *Sony Corp.*, 464 U.S. at 449-50; *Hustler*, 795 F.2d at 1155.

48. *Sega*, 24 U.S.P.Q.2d at 1573.

49. *Id.* at 1570. The Court points to several cases which hold that a use would not be considered fair if 'it would adversely effect the potential market for the copyrighted work.' Sony Corp. v. Universal City Studios, 464 U.S. 417, 451 [220 U.S.P.Q. 665] (1984). *Id.*

50. *Id.* at 1571. The Court noted that video game buyers typically purchased more than one video game and that "There is no basis for assuming that Accolade's 'Ishido' has significantly affected the market for Sega's 'Altered Beast,' since a consumer might easily purchase both; nor does it seem unlikely that a consumer particularly interested in sports might purchase both Accolade's 'Mike Ditka Power Football', and Sega's 'Joe Montana Football', particularly if the games are, as Accolade contends, not substantially similar." *Id.*

51. *Id.*

52. *Id.* at 1573.

53. *Sega*, 24 U.S.P.Q.2D at 1573.

colade from a claim of copyright infringement with respect to its finished products. Sega has reserved the right to raise such a claim, and it may do so on remand.[54]

E. *Trademark Issues*[55]

Sega's trademark Security System (TMSS), initialization code not only allows game programs to operate on Sega's Genesis III console, but also generates an on-screen display of Sega's trademark.[56]

Having gained access to Sega's Genesis console through the initialization code, Accolade also, in using that code, triggered an on-screen display of Sega's trademark. Both parties agreed that this was an unauthorized and improper use of Sega's trademark.[57] However, the Court wrestled with the question of whether Accolade was the injured party because users of its games were lead to believe that the games were manufactured by Sega, or whether Sega was the injured party because its name was being used without its authorization. Both Sega and Accolade claimed that the other was in violation of statutes due to the use of the on-screen display.[58] Accolade claimed that Sega's use of the TMSS code to trigger the on screen dispay was a "false designation of origin under Lanham Act section 43(a), 15 U.S.C. section 1125(a)."[59] Sega, for its part, claimed that Accolade's use of its trademark was a violation of 32(1)(a) and 43(a) of the Lanham Act, 15 U.S.C. sections 1114(1)(a), 1125(a), respectively.[60]

The court concluded that because there was no other way to gain access to the Genesis III console and because Accolade clearly had no desire to appropriate Sega's trademark for its own use, it was in fact Sega who would be held primarily responsible for any resultant confusion created by the on-screen display of its trademark.

F. *Conclusion*

The Ninth Circuit held that disassembly of computer object code is fair use if such disassembly is the only way to gain access to

54. *Id.* at 1574.
55. *Id.*
56. *Id.*
57. *Id.*
58. *Sega*, 24 U.S.P.Q.2D at 1574.
59. *Id.*
60. *Id.*

the functional elements embodied in a copyrighted computer program, and if there is a legitimate reason for this access. The court further held that the confusion arising out of the on-screen display of Sega's trademark, was in fact attributable to plaintiff.[61] Despite the Court's ruling that intermediate copying of computer code constitutes infringement, it is possible to argue that it does not in fact constitute copyright infringement if the intermediate copying is done to create an original program which does not copy the protected expression of the copyrighted work.[62]

61. *Id.* at 1577.

62. *See e.g.*, NEC v. Intel, 10 U.S.P.Q.2d 1177 (N.D. Cal. 1989). That case involved the disassembly of microcode. The Court ruled that studying code that is not copied does not infringe, nor does copying that is "deleted or so disguised as to be unrecognizable."